

**WE CLAIM:**

1. A method of producing commercial glass in a glass melting furnace using the combustion of pulverized fuel as a heating source for melting raw materials for producing glass, the method comprising:
  - a) providing feeding means for dosing a regulated and highly controlled flow of an exact weight of a mixture of pulverized fuel and air or gas under pressure for pneumatic transport, said pulverized fuel comprising fixed carbon and impurities selected from the group consisting of sulfur, nitrogen, vanadium, iron, nickel, and mixtures thereof;
  - b) said feeding means comprising:
    - (i) storing the pulverized fuel in said feeding means;
    - (ii) discharging the pulverized fuel from the feeding means toward at least one main pipe;
    - (iii) mixing the pulverized fuel with a first flow of air or gas for producing a pulverized fuel-air or gas mixture, said pulverized fuel-air or gas mixture being distributed toward said pipe;
    - (iv) regulating in a controlled manner the pulverized fuel-air or gas mixture from the main pipe to each of a plurality of burners of a specific design in a glass melting region

of the glass melting furnace for operating said burners in alternate operating cycles between combustion and non-combustion cycles;

- (v) supplying simultaneously a second flow of air or gas together with the pulverized fuel-air or gas mixture to each of said burners of specific design whereby a combustion cycle is carried out in the glass melting furnace; and
  - (vi) returning the flow of pulverized fuel-air or gas mixture from the main pipe toward the feeding means while the alternate operating cycle on the burners is carried out;
- (c) burning said pulverized fuel by means of said burners of specific design in the glass melting region of said glass melting furnace while providing a combustion flame with high thermal efficiency to carry out a controlled heating for melting the commercial glass;
- (d) counteracting negative effects in the glass and the glass melting furnace while maintaining a controlled relation between the pulverized fuel being supplied to each of the burners to ensure stability of said glass and said glass melting furnace; and
- (e) counteracting erosive and abrasive effects of the pulverized fuel in the glass melting furnace by means of refractory materials, said

refractory materials being selected from the group consisting of a fused cast material of zircon-silica-alumina, magnesium oxide, magnesia, zirconium-silicate, and mixtures thereof.

2. The method as claimed in claim 1, wherein step b) (iii) comprises distributing the fuel-air or gas mixture in at least two distribution pipes to supply the pulverized fuel-air or gas mixture to each of the burners in an alternate operating cycle.
3. The method as claimed in claim 1, wherein the refractory material contains at least 98% of magnesium oxide, by weight.
4. The method as claimed in claim 1, wherein the refractory material contains about 80% magnesia and about 20% zirconium-silicate, by weight.
5. The method as claimed in claim 1, wherein the method further includes supplying fuel oil to a third series of burners, said third series of burners being arranged in said glass melting region of said melting chamber.